



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) : James M. Ziobro
TITLE : INTELLIGENT COLOR TO TEXTURE
CONVERTER
APPLICATION NO. : 09/725,384
FILED : November 29, 2000
CONFIRMATION NO. : 6573
EXAMINER : Chante E. Harrison
ART UNIT : 2628
LAST OFFICE ACTION : July 10, 2005
ATTORNEY DOCKET NO. : A0125Q-US-NP
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SECOND PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. Applicant respectfully submits the following 5 pages including reasons for requesting a Pre-Appeal Review of the above-captioned matter.

Certificate of Mailing or Transmission	
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Express Mail Label No.:	Signature: <i>Iris E. Weber</i>
Date: <i>November 10, 2006</i>	Name: Iris E. Weber

The Present Application

Briefly, the present application is directed toward methods and systems for providing black and white copies of documents that were intended to be printed in color. More particularly, the methods and systems of the present application seek to preserve information that was encoded in the color of portions of, for example, a bar or pie chart image while, at the same time, minimizing changes to the image so that the methods and systems may be appropriately provided in a "walk-up mode" of, for example, a photocopier.

The color information is preserved by replacing it with a subtle pattern or texture. However, the pattern or texture is **only applied to portions of the image that conflict with other portions of the image**. That is, while there are millions of colors or shades of colors possible in a color image, a typical black and white printer might only be able to produce 256 shades of gray. Accordingly, many colors must be mapped or represented by any particular shade of gray. The methods of the present application look for colors in an image that would be mapped to the same shade of gray. When colors are found that would be mapped to the same shade of gray, **those colors are classified as conflicting**, and the subtle texture or pattern is applied to only those portions of the black and white image associated with conflicting colors. Indeed, only some of the conflicting colors need receive a pattern or texture. For example, if an image includes two colors that would be mapped to the same shade of gray, only one of them need be modified to include a texture or pattern.

Accordingly, the method can be applied even to images that do not need the method, such as photographs, without noticeably distorting those images. Therefore, the method is appropriately applied in a "walk-up mode."

Additional summary information regarding of the present application can be found, for example, in Applicant's Response F at pages 2-3 and Response E at pages 2-4.

The Cited References

In stark contrast, the primary reference of the Office Action to Lee is not concerned with preserving color information. Indeed, Lee discloses discarding color information, and in so doing, **teaches away** from the claims of the present application.

The Office Action relies on Lee for disclosure of identifying conflicting colors. However, Lee does not identify conflicting colors. Instead of attempting to preserve color information, Lee discloses sacrificing color information for the goal of data compression. **This represents an error of the Office Action**. As discussed, for example, at pages 4 and 5 of Applicant's Response F, Lee maps a plurality of colors in a particular cluster to a single representative color. Where the system of the present application attempts to preserve the distinctiveness of conflicting colors, the system of Lee discards the distinctiveness of colors in favor of a color count reduction (column 6, lines 51-62; column 7, lines 16-20; column 8, lines 16-20, of Lee).

Further in this regard, it is respectfully submitted that the cited portion of Lee (column 6, lines 8-18) (see the bottom of page 2 of the Final Office Action) describes a particular kind of

color distance calculation relative to a clustering process (column 5, lines 48-57) and is unrelated to classifying peaks within a histogram and have a similar luminance **as conflicting colors** (see Applicant's Response F, pages 10-11, for further discussion). Accordingly, the rejections are **based on clear error**.

The secondary references do not cure the deficiencies of Lee. Isemura and Ichikawa are discussed, for example, in Applicant's Response F at pages 3 and 4. Briefly, instead of preserving color information or distinctiveness associated therewith, Isemura discloses assigning the same pattern to large ranges of colors (FIG. 9A, 9B, 10B) thereby eliminating their distinctiveness. Instead of adding subtle patterns only to some or all conflicting colors, it is respectfully submitted that Isemura discloses adding character labels to images (e.g., FIG. 15; column 10, lines 38-51; FIGS. 33A-33B; column 16, line 43 - column 17, line 11) to all the colors in the image. If such character labels identifying colors were added to a photograph, the original image would be obliterated.

In an apparent acknowledgement of this problem and that the methods of Isemura are not appropriate for the walk-up mode or "ordinary procedure," the methods of Isemura (FIG. 34, FIG. 37) require that a color recognition image editing procedure (S113, S223) be positively selected (column 17, lines 26-27; column 18, lines 4-6).

Ichikawa is only applied against the dependent claims. In the interest of brevity, the reviewers are directed to page 6, last two paragraphs; the top of page 8 and pages 13 and 14 of Applicant's Response E and pages 4, 7-9; page 14, last line - page 16 of Applicant's Response F for a discussion of **clear errors related to Ichikawa**.

It is respectfully submitted that **the Examiner's rejections of, for example, independent claims 4 and 10 presented in the Office Action mailed July 10, 2006, are based on or include clear errors**. Additionally, the Office Action does not meet its burden for presenting a *prima facie* case of obviousness.

Lee does not seek to preserve the distinctness of colors. Instead, Lee asserts that chromatic variations within an object surface tend to be grossly discounted by our color vision and, therefore, it is not necessary to render those variations accurately (Abstract). Because subtle chromatic variations within an object surface are often ignored when an image is viewed [the invention of Lee] colors each image region with only one chromaticity, i.e., that of the peak cell in the color histogram (column 8, lines 16-22). Accordingly, it is respectfully submitted that Lee teaches away from the subject matter of the present application, and there is no motivation for combining Lee with any other reference against the claims of the present application.

The **clear errors** of the Examiner's rejections and the **lack of motivation to combine** the references are discussed in greater detail, first in Applicant's Response E on pages 8-14. Additionally, a Reply to the Examiner's Response to the Arguments presented in Applicant's Response E that points out clear errors in the Examiner's Response to Arguments is provided in

the Applicant's Response F on pages 4-10. The **clear errors** in the Examiner's rejections and the **lack of motivation to combine** the references are also addressed in Applicant's Response F at pages 10-16. The attention of the reviewers is respectfully directed to at least these portions of the Applicant's Responses.

In summary, it is respectfully submitted that:

1.) Lee is not concerned with rendering black and white versions of color images. Accordingly, Lee is not analogous art, and there can be **no motivation for combining Lee with Isemura and Ichikawa.**

2.) Even if Lee is considered to be analogous art, the Office Action relies on Lee for disclosure of classifying peaks within a histogram that have similar luminance as conflicting colors and directs the attention of the Applicant to column 6, lines 8-18, in support of this assertion. However, Lee is not concerned with conflicting colors and does not disclose or suggest classifying peaks within a histogram as conflicting colors. Column 6, lines 6-18, cited by the Office Action, discusses a method for calculating a color distance between a color C and a peak M and is **unrelated to classifying colors as conflicting.** Accordingly, Lee does not disclose the subject matter for which it is relied and the rejection of independent **claim 4** (Detailed Action, page 2, last two lines) is **based on clear error.** Further in this regard, it is noted that the Office Action misquotes language from **claim 4.** While the Office Action stipulates that Lee fails to disclose rendering a color image --to, and only to, at least one representative single-colorant version--, claim 4 actually recites --to, and only to, at least one **respective** single-colorant version--. In at least this regard, the rejection of independent claim 4 is **based on clear error.**

3.) With regard to independent **claim 10**, the Office Action asserts that Lee discloses an image analyzer operative to find and classify conflicting colors in the image and directs the attention of the Applicant to column 5, lines 26-57 (detailed action, page 4, second to last paragraph). However, while the cited portion of Lee includes the words histogram, luminance, color and peak, the cited portion does not disclose or suggest an image analyzer operative to find and classify **conflicting colors** in a color image. Instead, the cited portion is part of a color allocation procedure (FIG. 2, reference numeral 240) wherein colors are selected to be representative of a larger group of colors (column 6, lines 52-63). Lee simply does not disclose or suggest classifying colors as conflicting. Accordingly, it is respectfully submitted that the rejection of independent claim 10 is **based on clear error.**

4.) Isemura does not include the subject matter for which it is relied. The Office Action stipulates that Lee fails to disclose rendering a color image into a single-colorant space, applying at least one distinct spatial modulation to, and only to, at least one respective single-colorant version of at least one of the conflicting colors, thereby ensuring that all single-colorant versions of colors in the image are visually distinguishable from one another while minimizing distortions in a remainder of the single-colorant version of the image (Detailed Action, page 3).

The Office Action appears to rely on Isemura to remedy this deficiency of Lee. However, the Office Action does not identify portions of Isemura that remedy this deficiency. Instead, the Office Action asserts that Isemura discloses image processing in which **a)** color images are converted into monochrome images, **b)** allowing a user to specify patterns associated with a given color, **c)** print the color image in monochrome graphic pattern and **d)** using a histogram with frequencies of hue. However, even if Isemura discloses these elements, these elements do not disclose or suggest applying at least one distinct spatial modulation to, and only to, at least one respective single-colorant version of at least one of the **conflicting colors**, thereby ensuring that all single-colorant versions of colors in the image are visually distinguishable from one another while minimizing distortions in a remainder of the single-colorant version of the image.

The Office Action goes on to cite various portions of Isemura and indicate that the Examiner interprets these portions in various ways. In this regard, it is noted that the Office Action drops the reference to --conflicting-- in its assertions related to Isemura (detailed action, page 3, fourth line from the bottom). That is, the Office Action appears to concede that Isemura does not disclose or suggest applying a distinct pattern to, and only to, at least one respective **conflicting** color, even though the Office Action relies on Isemura for this disclosure. Further in this regard, it is respectfully submitted that nothing in the cited portions of FIG. 9A and column 10, lines 5-11, discloses or suggests applying at least one **distinct** spatial modulation to, and only to, at least one respective single-colorant version of at least one of a **conflicting** color. Instead, it is respectfully submitted that FIG. 9A depicts designating a **single** pattern to a **wide range of colors between red and blue** (9(a)-9(e)). Clearly, not all of the colors in that range are conflicting. Any reading of those colors as conflicting can only be based on impermissible hindsight. Accordingly, FIG. 9A does not disclose or suggest applying at least one **distinct** spatial modulation to, and only to, at least one respective single-colorant version of at least one of the **conflicting** colors. Column 10, lines 5-11, discuss a color detection circuit identifying areas that have the same colors and sending an identification signal to a character pattern generator. The character pattern generator generates a character pattern indicating the color names informed with the detection signal sent from the color detection circuit. It is respectfully submitted that this is a discussion of adding labels to a figure (see the addition of the words RED, BLUE and GREEN to an image as depicted in FIG. 14 and FIG. 15). It is respectfully submitted that Isemura does not disclose or suggest that labels be provided only to **conflicting** colors and again the rejection of independent **claim 4** is **based on clear error**.

Arguments similar to these are submitted in support of **claim 10**. The Office Action relies on FIG. 42 and column 19, line 59 - column 20, line 3, of Isemura for disclosure of an image processor operative to add spatial modulations to single colorant versions of only the conflicting colors within the single colorant versions of the color image. However, FIG. 42 is a depiction of a control panel. The cited portions of columns 19 and 20 indicate that when a start key is pressed, a color scanner reads colors from an original. The signals are converted into digital signals and

a luminance signal is generated. The luminance signal is converted into a binary luminance signal and a binary coded signal is generated from a selector. It is respectfully submitted that the cited portions of columns 19 and 20 do not disclose or suggest adding spatial modulations. Furthermore, the cited portions of columns 19 and 20 do not disclose or suggest adding spatial modulations to single-colorant versions of **only the conflicting colors** within a single-colorant version of a color image.

Accordingly, it is respectfully submitted that the rejection of independent **claim 10** is **based on clear error**.

5.) There is no motivation in the art to combine Lee and Isemura. a) Lee is non-analogous art. b) Lee and Isemura do not disclose or suggest all of the elements for which they are relied. Accordingly, there is no motivation to combine them against the claims of the present application. c) The Office Action fails to suggest a reasonable motivation for combining Lee and Isemura. The sentence alleging or suggesting a motivation for combining Lee and Isemura, found at the top of page 4 of the detailed action, is unclear and/or specious. The alleged motivation, --to allow for accurate recognition of color images of original images in full representation when the image is produced on a monochrome output device, such as a printer, copier or the like-- is something allegedly achieved by Isemura on its own (column 1, lines 65-67; column 10, lines 52-59). Accordingly, there is no motivation to combine Isemura with Lee in order to achieve this goal. d) It is respectfully submitted that the rejection of the claims of the present application is based on a misinterpretation of the references and/or a re-interpretation of the references that is clearly based on information **gleaned only from the present application**. Accordingly, the rejections of the claims in the present application are based **on impermissible hindsight**.

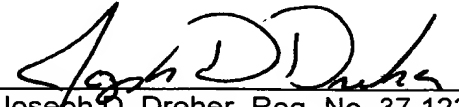
Reconsideration of the Restriction Requirement

For the reasons outlined on page 8 of Applicant's Response E, reconsideration and withdrawal of the restriction requirement, which was based on alleged differences between --selectively added text-- recited in withdrawn claim 1 and the --spatial modulation-- recited in claim 4, is respectfully requested.

Respectfully submitted,

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November 10, 2006
Date


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